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First record of Spotted Knifejaw, *Oplegnathus punctatus* (Temminck & Schlegel, 1844) (Oplegnathidae) in the southern South China Sea

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Abstract

Oplegnathus punctatus (Temminck & Schlegel, 1844) is reported for the first time in the southern South China Sea, off Pulau Tenggol, Malaysia. This species is native to the north-western and central Pacific Ocean and mainly occurs in subtropical and warm temperate waters. This record is a significant southward extension of its range and also represents the first documentation of the family Oplegnathidae in Malaysia.

Keywords

Coral reef, knifejaw, Malaysia, marine fish, new record, range extension

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Introduction

Surveys on reef-fishes are frequently conducted in Malaysia for monitoring the health of coral reefs. Reef fish diversity in Malaysia have been reported in several publications that also serve as identification guides (eg, Matsunuma et al. 2011; Seah et al. 2020; Motomura et al. 2021). It was estimated that a total of 925 fish species inhabit the coral reefs of Malaysia (Chong et al. 2010).

The family Oplegnathidae in the order Centrachiformes contains a single genus, *Oplegnathus* Richardson, 1840, which has seven nominal species (Fricke et al. 2021). The main habitat for *Oplegnathus* is at rocky and coral reefs area (Kimura et al. 2018). The genus is generally recognized by the jaw teeth, which are fused into a parrot-like beak in adults and, hence, *Opelegnathus* species are named knifejaws (Froese and Pauly 2021). Diagnostic features of knifejaws are the single dorsal fin XI–XII, 11–24; anal fin III, 11–17; and body covering of small ctenoid scales (Kimura et al. 2018). *Opelegnathus* species are mainly distributed in the subtropical and warm temperate seas in the northwestern and central regions of the Pacific Ocean (Froese and Pauly 2021; GBIF 2021). The conservation status of *Oplegnathus*

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punctatus (Temminck & Schlegel, 1844) is currently not evaluated in the IUCN Red List of Threatened Species.

Herein, we report the first confirmed record of the family Oplegnathidae in Malaysia based on the observation of a specimen of *O. punctatus* on a coral reef off the state of Terengganu.

Methods

Our new record was obtained during a coral reef health survey (Lee et al. 2019) conducted at Pulau Tenggol in the South China Sea off Terengganu, Peninsular Malaysia. A 50-m transect line was used in shallow water and surveyed 5 m wide along the transect to document the diversity and abundance of fishes in the area. The survey was part of the Post-COVID Expedition around coral reef islands of Terengganu, Malaysia. Where possible, fishes were photographed using a Canon G7 Mark II, and the images used for identification. Multiple underwater still photographs and videos were taken at various angles of the fish.

Results

Oplegnathus punctatus (Temminck & Schlegel, 1844)

New record. MALAYSIA – Terengganu • South China Sea, Pulau Tenggol, Teluk Rajawali; 04°48′54″N, 103°40′53″E; Yusri Yusof observer; 13 October 2020; 2 individuals photographed (Fig. 1).

The two fish, each estimated at around 50 cm total length, were swimming around rocky coral reef at depths of between 2 and 5 m and were grazing on algae on the surfaces of rocks. One of the fish had a small, 25-cm remora (*Echeneis naucrates* Linnaeus, 1758) attached to its body.

We document *O. punctatus* for the first time in Malaysian waters. Our new record also represents a considerable southward range extension for the species.

Identification. Diagnostic features of *O. punctatus* include: many irregular dark spots on head, body, and dorsal-, anal-, and caudal-fins; head and body greyish brown; whitish jaws; and dusky pectoral fins and dark pelvic fins (Fig. 1) (Kimura et al. 2018).

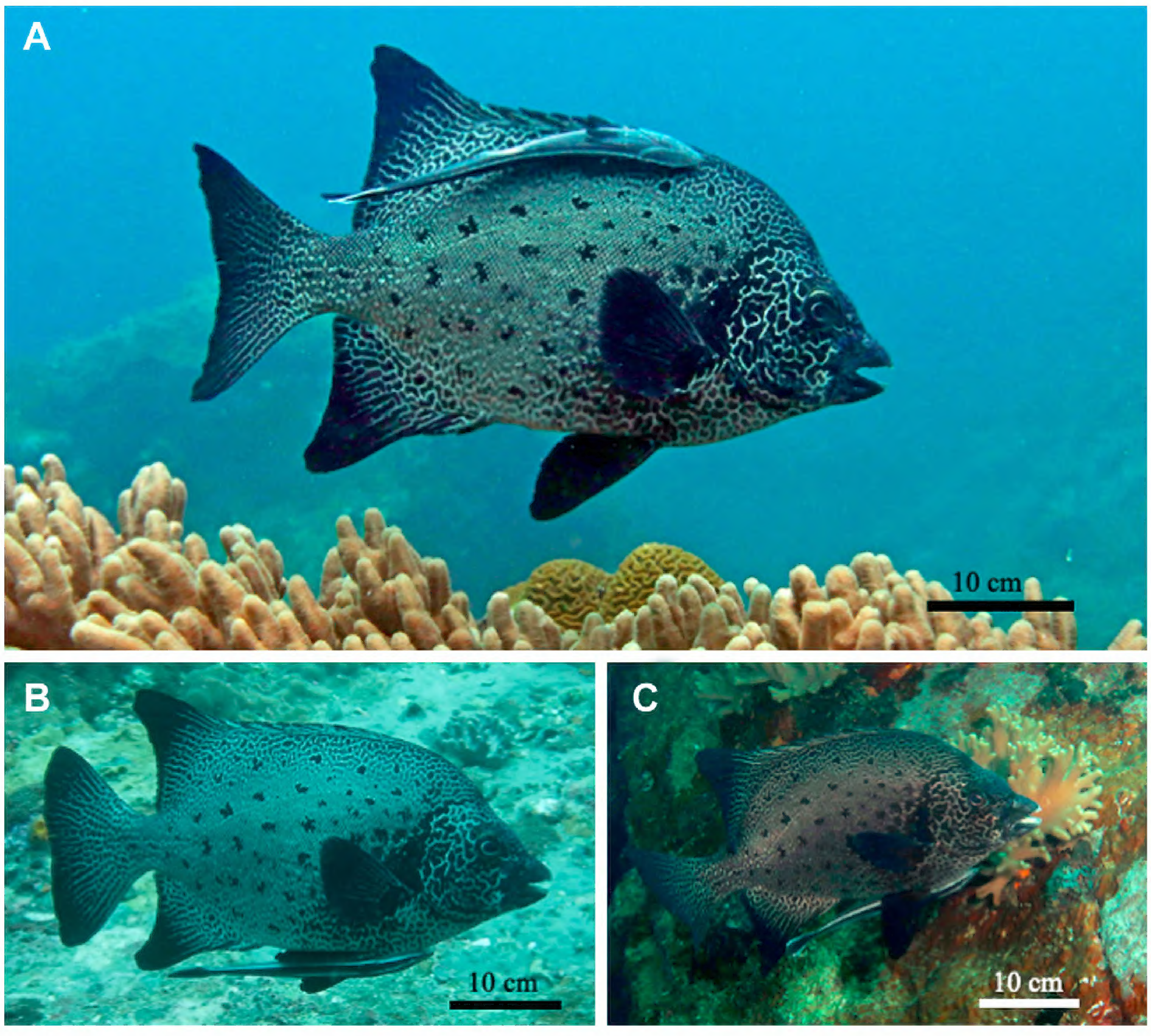

Figure 1. *Oplegnathus punctatus* in Pulau Tenggol. **A.** In water column. **B.** On bare rock. **C.** On soft coral.

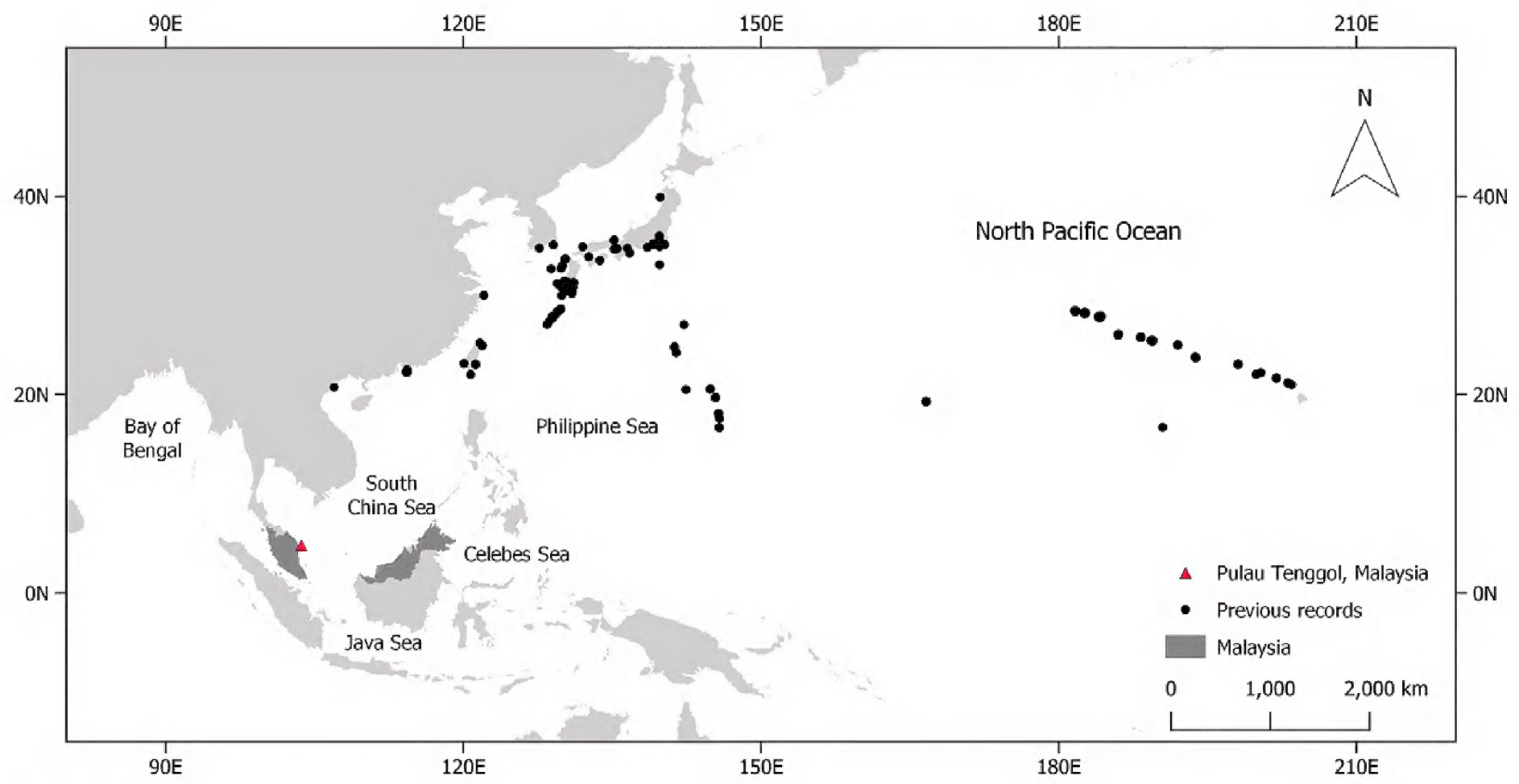

Figure 2. Distribution of *Oplegnathus punctatus* in the Northern Pacific and open ocean (black circle dot), based on GBIF (2021) data and the new record in the southern South China Sea, Malaysia (red triangle).

Discussion

Oplegnathus punctatus was observed in Malaysia by the first author, who has surveyed coral reefs in the country for more than 20 years. Much of the coastline of Pulau Tenggol has corals growing on a rocky substrate. The reefs there are in good condition, with live coral cover of 51.5% (Hyde et al. 2019). Large rock boulders and massive coral colonies were observed during the survey in most areas surrounding Pulau Tenggol. These are believed to be suitable habitat for *O. punctatus* (Kimura et al. 2018).

Oplegnathus punctatus has been widely documented from the central Pacific Ocean, including Hawaii and Guam, to the north-eastern Pacific around Korea and Japan to Vietnam. This species occurs on coastal rocky reefs in depths down to 135 m (Kimura et al. 2018; Froese and Pauly 2021). The previous southernmost record was from Ha Long Bay, Vietnam (Kimura et al. 2018). The present record extends the known range of *O. punctatus* by 1800 km to the southern South China Sea and to the Sunda Shelf (Fig. 2), which has a depth of less than 100 m (Tangang et al. 2011).

From November to March each year, the east coast of Peninsular Malaysia receives strong northeasterly monsoon winds, resulting in strong currents originating from Taiwan (Akhir 2012). Cold water flows along the Vietnam coast and approaches Peninsular Malaysia, centered at 5°N (Tangang et al. 2011; Akhir 2012). Pulau Tenggol is located near this cold-water inflow and hosts suitable rocky habitat for *O. punctatus*, and as juveniles of this species typically attach to drifting seaweed (Safran and Omori 1990), we hypothesize that currents transport drifting seaweed along with juvenile *O. punctatus*.

One individual of *O. punctatus* was observed with a remora, *Echeneis naucrates*, which is believed to be juvenile based on its size and colour (upper and lower margins of caudal fin whitish) (Collette 1999).

Oplegnathus punctatus is similar in appearance to Spotted Scat, *Scatophagus argus* (Linnaeus, 1766), which is known in Malaysia as 'Kitang" in local Malay language. For *O. punctatus*, we propose the Malaysian vernacular name "Kitang Pisau Bintik" for use by local fishermen and divers. In Bahasa Malaysia, "pisau" means knife (in reference to the sharp teeth in the jaws and the English vernacular name) and "bintik" means spots (in reference to its colour pattern).

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Authors' Contributions

Conceptualization: YY, JNL. Formal analysis: YGS. Investigation: YY, YGS. Funding acquisition: MRI. Methodology: YY. Validation: YGS. Visualization: JNL. Writing – original draft: JNL. Writing – review and editing: YY, YGS, MRI, JNL.

References

Akhir MFM (2012) Surface circulation and temperature distribution of Southern South China Sea from Global Ocean Model (OCCAM). Sains Malaysiana 41 (6):701–714.

Chong VC, Lee PKY, Lau CM (2010) Diversity, extinction risk and conservation of Malaysian fishes. Journal of Fish Biology 76 (9):2009–2066. https://doi.org/10.1111/j.1095-8649.2010.02685.x

Collette BB (1999) Echeneidae. In: Carpenter K, Niem VH (Eds) FAO species identification guide for fishery purposes. The living marine resources of the western central Pacific. Vol. 4. Bony fishes, part 2 (Mugilidae to Carangidae). Food and Agriculture Organization of the United Nations. Rome, Italy, 2652–2654.

Fricke R, Eschmeyer WN, Van der Laan R (Eds) (2021) Eschmeyer's catalog of fishes: genera, species, references. California Academy of Sciences, San Francisco, USA. http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp. Accessed on: 2021-3-23.

Froese R, Pauly D (2021) *Oplegnathus punctatus* (Temminck & Schlegel, 1844). FishBase, Stockholm, Sweden. https://www.fishbase.se/summary/Oplegnathus-punctatus.html Accessed on: 2021-3-23.

GBIF (2021) Global Biodiversity Information Facility occurrences, version 16 April 2020. https://doi.org/10.15468/dl.f6ecev

Hyde J, Ab Rahim GY, Chan AA (2019) Malaysia coral reef 2018. Department of Fisheries Malaysia, Ministry of Agriculture and Agro-Based Industry, Putrajaya, Malaysia, 92 pp.

Kimura S, Imamura H, Nguyen VQ, Pham TD (Eds.) (2018) Fishes of Ha Long Bay, the natural heritage site in northern Vietnam. Fisheries Research Laboratory, Mie University, Shima, Japan, 314 pp.

Lee JN, Yusri Y, Ab Rahim GY, Lim AG, Noorikhwanie Z, Izarenah MP, Md. Nizam I, Mohamad Anuar R (2019) Garis panduan sistem pemantauan dan Penilaian Tapak Selam [Guidelines for dive site monitoring and evaluation system]. Jabatan Perikanan Malaysia, Kementerian Pertanian dan Industri Asas Tani, Putrajaya, Malaysia, 44 pp. [in Malay]

Matsunuma M, Motomura H, Matsuura K, Shazili NAM, Ambak MA (Eds.) (2011) Fishes of Terengganu-east coast of Malay Peninsula Malaysia. National Museum of Nature and Science, Tokyo, Japan, Universiti Malaysia Terengganu, Kuala Terengganu, Malaysia, and Kagoshima University Museum, Kagoshima, Japan, 251 pp.

Motomura H, Kimura S, Seah YG, Sheikh Abdul Kadir ST, Ghaffar MA (Eds.) (2021) Reef and shore fishes of Bidong Island, off east coast of Malay Peninsular. Kagoshima University Museum, Kagoshima, Japan, 80 pp.

Safran P, Omori M (1990) Some ecological observations on fishes associated with drifting seaweed off Tohoku coast, Japan. Marine Biology 105: 395–402. https://doi.org/10.1007/BF01316310

Seah YG, Jaafar TNAM, Ali MS (Eds.) (2020) Field guide to trawl fishes near Bidong Island. Universiti Malaysia Terengganu, Kuala Terengganu, Malaysia, 144 p.

Tangang FT, Xia C, Qiao F, Juneng L, Shen F (2011) Seasonal circulations in the Malay Peninsula eastern continental shelf from a wave-tide-circulation coupled model. Ocean Dynamics 61:1317. https://doi.org/10.1007/s10236-011-0432-5